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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,176	11/17/2003	Andrew B. Facciano	03W070	4091

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EXAMINER

HAYES, BRET C

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/715,176	Applicant(s) FACCIANO ET AL.	
	Examiner Bret C Hayes	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-22 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 12, 23, 24 and 28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/23/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
2. Claim 6 recites an outer nose cone angle of between about 30 degrees and about 50 degrees, while depending from claim 5, which recites an angle of between about 5 degrees and about 10 degrees. The two ranges are mutually exclusive.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 7, 15 – 17, 21, 22 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,159,151 to Dransfield et al. (*Dransfield*).
5. Re – claim 1, Dransfield discloses the invention as claimed including: a missile, col. 2, line 18 (2:18), comprising: a payload assembly **15**, e.g., as in Fig. 1; and one or more booster stages*, 2:34, separably coupled to the payload assembly **15**; wherein the assembly **15** includes at least two nosecones **16**, **13**. *While Dransfield only discloses a rocket motor, as many booster stages as necessary would be inherent in any extended range missile requiring such.

Art Unit: 3644

6. Re – claim 2, Dransfield further discloses: wherein the two nosecones **16**, **13** include an outer nosecone **16** and an inner nosecone **13**; and wherein the nosecone **13** is located at least partially within the assembly **15**, internal to the nosecone **16**.
7. Re – claim 3, Dransfield further discloses: wherein the nosecone **16** has a more streamlined shape than the nosecone **13**.
8. Re – claim 4, Dransfield further discloses: wherein the nosecone **16** has a sharper cone angle than the nosecone **13**.
9. Re – claim 5, Dransfield further discloses: wherein the nosecone **16** has an outer nose cone angle of between about 5 degrees and about 10 degrees, e.g., around reference character **18** of Fig. 2.
10. Re – claim 6, Dransfield further discloses: wherein the nosecone **16** has an outer nose cone angle of between about 30 degrees and about 50 degrees, e.g., around reference character **26** of Fig. 2.
11. Re – claim 7, Dransfield further discloses: therein the outer nosecone **16** has a different separation mechanism, *inter alia* **22**, from that of the inner nosecone **13**. The separation mechanism for the inner nosecone **13** being impact with a target.
12. Re – claim 15, Dransfield further discloses: wherein the assembly **15** includes an attitude control system **14**.
13. Re – claim 16, Dransfield discloses a rocket motor as set forth above regarding claim 1.
14. Concerning method claims 17, 21, 22 and 25, in view of the structure disclosed by Dransfield, the method of operating the device would have been inherent, since it is the normal and logical manner in which the device could be used.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 8 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dransfield as applied above in view of US Patent No. 3,601,055 to Crockett.

17. Re – claim 8, Dransfield discloses the invention substantially as claimed as applied above except for wherein the nosecone 16 includes outer nosecone petals configured to hingedly rotate and separate from the payload assembly. Crockett teaches an outer nosecone, *inter alia*, 24 including outer nosecone petals 26 configured to hingedly rotate and separate from a payload assembly, e.g., Fig. 2, in the same field of endeavor for the purpose of protecting a payload and removing the petals during flight. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dransfield to include the outer nosecone including outer nosecone petals configured to hingedly rotate and separate from the payload assembly as taught by Crockett in order to protect the payload and remove the petals during flight.

18. Re – claim 9, Dransfield in view of Crockett discloses the invention substantially as claimed as applied above except for wherein the payload assembly includes a piston actuator coupled to the outer nosecone petals. Dransfield teaches an explosive actuator 25 separating the nosecone 16 from the missile. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Dransfield in view of Crockett to substitute a piston actuator to separate the petals, since the equivalence of a piston actuator and an explosive

Art Unit: 3644

actuator for their use in the nosecone/petal separation art and the selection of any known equivalents to an explosive actuator would be within the level of ordinary skill in the art.

19. Re – claim 10, Dransfield in view of Crockett discloses the invention substantially as claimed as applied above. Dransfield further discloses the explosive actuator **25** being in a forward half of the nosecone **16**.

20. Re – claim 11, Dransfield in view of Crockett discloses the invention substantially as claimed as applied above except for the inner nosecone **13** including inner nosecone petals. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further include inner nosecone petals, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

21. Claims 18 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dransfield.

22. Re – claim 18, Dransfield discloses the invention as claimed, except for explicitly wherein the first phase is a relatively low-altitude phase, at a lower altitude than the second phase. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dransfield to include the first phase being a relatively low-altitude phase, at a lower altitude than the second phase, since it was known in the art that the first phase of the flight of a missile is generally the ‘gaining altitude’ portion of the flight and the second phase is the target seeking/losing altitude portion of the flight.

23. Re – claim 19, Dransfield discloses the invention substantially as claimed, except for the altitude including up to about 50 km. It would have been obvious to one having ordinary skill in

Art Unit: 3644

the art at the time the invention was made to include the altitude up to about 50 km, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

24. Re – claim 20, Dransfield discloses the invention substantially as claimed, except for the first phase including boosting of the missile by one or more booster stages of the missile. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dransfield to have the first phase include boosting of the missile by one or more booster stages of the missile since it was known in the art that the first phase of the flight of a missile is generally the portion of the flight requiring boosting.

25. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dransfield in view of Crockett as applied above.

26. Concerning method claims 26 and 27 in view of the structure disclosed by Dransfield in view of Crockett as applied above, the method of operating the device would have been inherent, since it is the normal and logical manner in which the device could be used.

Allowable Subject Matter

27. Claims 12, 23, 24 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

28. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither discloses nor fairly teaches the recited limitations of the claimed invention including, but not limited to: claim 12, inner nosecone petals being hermetically

Art Unit: 3644

sealed; claim 23, the separating including moving a center of pressure of the payload assembly aftward; claim 24, dependent upon claim 23; and claim 28, separating the inner nosecone from the payload assembly at completion of the second phase of the flight at an altitude of at least about 90 km.

29. This statement is not intended to necessarily state all the reasons for allowance or all the details why the claims are allowed and has not been written to specifically or impliedly state that all the reasons for allowance are set forth (MPEP 1302.14).

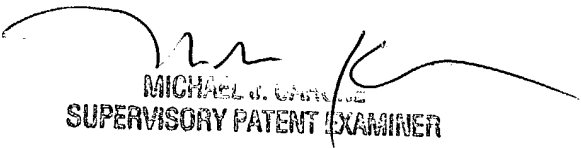
Conclusion

Any inquiry concerning this communication should be directed to Bret Hayes at telephone number (703) 306 – 0553. The examiner can normally be reached Monday through Friday from 5:30 am to 3:00 pm, Eastern Standard Time.

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached at (703) 306 – 4198. The fax number is (703) 872 – 9306.

bh

7/31/04


MICHAEL C. CARONE
SUPERVISORY PATENT EXAMINER